

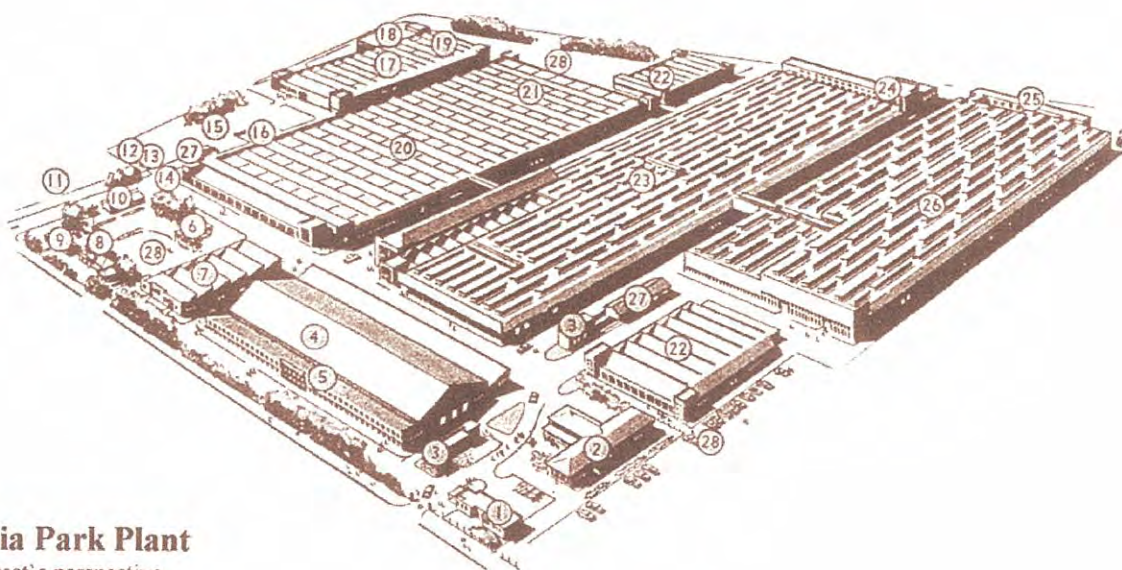


**B. M. C.  
LEYLAND AUSTRALIA  
HERITAGE GROUP Inc.**



A no-profit association of some hundreds of former employees and interested persons whose mission is to preserve the heritage of BMC – Leyland Australia and its associated companies as a significant part of Australia's automotive manufacturing history.

**B. M. C. – LEYLAND  
MOTOR VEHICLE MANUFACTURING PLANT**



**BMC**  
**Victoria Park Plant**  
An architect's perspective

**REPORT ON THE CEREMONY**

held in the Shannon Room at Royal Randwick Racecourse  
on Sunday, June 25, 2000 for the  
unveiling of the

**HISTORIC ENGINEERING MARKER**

to be installed on the site of the Plant at  
Victoria Park, Zetland, Sydney



# Report on Ceremony for the Award of an HISTORIC ENGINEERING MARKER for the site of the former BMC - LEYLAND MOTOR VEHICLE PLANT in recognition of its contribution to Australia's automotive manufacturing history.

## INTRODUCTION

The site was purchased by Lord Nuffield In 1947 and formally opened as a factory In 1950. The 26 hectare site was then progressively developed as a large manufacturing entity. Due to a number of factors causing financial difficulties the plant ceased operations in 1975 and the site was sold to the Commonwealth Government. All manufacturing equipment was removed and, after a period of use as a Naval Store, the buildings were demolished in 1999.

The current owners, Landcom, who are developing the site for residential housing had agreed to the installation of the plaque in a public area on completion. Accordingly, the unveiling was held in the Shannon Room at near-by Royal Randwick Racecourse. This was coincidental with an Anniversary Reunion of ex-employees and associates commemorating the 50th year since opening and 25th since closure of the Plant.

The BMC - Leyland Australia Heritage Group Inc. was formed in 1998 and its executive committee prepared the submission for the Historic Engineering Marker. Agreement was obtained from the site owner, Landcom, and the Committee then made arrangements for the combined unveiling ceremony and anniversary celebration.

## CEREMONY INVITATION AND INFORMATION LEAFLET

This included the program for the day, a summary of the plaque submission, and a background to the BMC - Leyland Australia Heritage Group. (Attachment 'A')

## ATTENDANCE

The President of the Sydney Division and members of the Institution's Heritage Committee were present. Also, Dr.Ruth Frappell, President of the Royal Australian Historical Society with husband, Dr.Leighton Frappell. Tony Prescott, Historian, representing the Heritage Office of NSW. John Rankine. (Fellow), as an early participant in the construction of the plant was also present.

Approximately one third of the total attendance of 300 comprised associated Car Club members headed by Brian Jubb, Chairman of the All British Day Committee, and Terry Thompson, President of the Council of Vintage, Veteran & Thoroughbred Motor Car Clubs. The President and Committee of the BMC - Leyland Australia Heritage Group were present supported by some 200 ex-employees, associates, and spouses. Ladies accounted for almost 40% of the total attendance. John Kay, ex-Director, Leyland Australia, gave valuable support as Master of Ceremonies for the day. (All Details — Attachment B)

## PROGRAM OF THE DAY.

11.30am Display of BMC-Leyland produced cars and memorabilia.

Welcome Address by Master of Ceremonies, John Kay.

(Attachment 'C')

Welcome to Car Club Members by Roger Foy, Heritage Group.

(Attachment 'D')

12.00-1.00 pm. Buffet lunch. Catering by AJC Convention & Exhibition Centre.

1.15 pm. Addresses describing personal experiences and some engineering detail of the BMC - Leyland Plant.

John Rankine , Rankine & Hill, Consulting Engineers for Structural Steelwork.

(Attachment 'E')

Rod Downs, Superintendent, Machine Plant Assembly.

(Attachment 'F')

Owen McDonald, Vehicle Planning Engineer, Car Assembly.

(Attachment 'G')



2.30 pm Introduction to Plaquing Ceremony and welcome to Institution of Engineers official party - John Kay.

Overview of BMC - Leyland Site and Plant history by Barry Anderson (Member), Deputy Chief Product Engineer. (Attachment 'H')

Address by Andrew Leventhal, President, Sydney Division. (Attachment 'I')

The plaque was mounted on an easel unveiled jointly by Andrew Leventhal and Dr. Ruth Frappell. The text of the plaque was quoted. (Attachment 'J')

The plaque was then formally presented to Mark Seymour representing Landcom who made a brief address describing the development of the site for the building of 1800 homes and apartments. He declared an undertaking by Landcom to maintain the heritage of the site - the remaining building, the ex-Totalisator, being heritage preserved - and a commitment that the plaque would be installed in the 'Tote' Park when operations were completed. Meantime, it would be held in the safe custody of the committee of the BMC - Leyland Australia Heritage Group. (Attachment 'K')

Proceedings concluded with a closing speech by John Kay eloquently expressing the spirit and enterprise of the Company which gained the affection of so many.

Two paragraphs are quoted that vividly conveyed these sentiments - "We had a great company undertaking imaginative ventures that were full of excitement and risk- and if we had a will to work and the ability to be cooperative, creative, and productive, there was no limit to what we could achieve. Unfortunately, as our society has evolved in the intervening years and as Australia's industrial mix has swung to services and away from its manufacturing orientation, there would appear to be less opportunity for our youth to reach out to achieve their maximum potential. I grieve at the thought of an Australia made up of computer programmers, waiters, and shopkeepers rather than designers, engineers, producers of products and salesmen who are proud to get out and sell a domestic product.

Quote continued - "For those of you who did not have the privilege of working for BMC/Leyland at Zetland, I hope that today leaves you with an understanding of what it meant to those who worked there, who contributed, who strived for something special and. gained tremendous satisfaction out of coming damn close to achieving what was probably impossible. I doubt that there are many companies or factories in the world that have engendered such affection - indeed almost a personality of it's own. Zetland. will always be a place where we had an experience that we would all love to repeat- maybe making a few changes along the way".

He thanked all who had contributed and participated in the day's events and activities concluded at 4.00 pm.

## **'THE CAR SHOW'**

The venue in the Shannon Room provided ample space for the display of 52 superbly presented samples of vehicles produced or processed by BMC - Leyland at Victoria Park. They resulted from the enthusiastic support of the members of the dozen car clubs present on the day. The NRMA also came along with two examples of their road - service vehicles of the period. The vehicles were shown in chronological order of production, ranging from a Morris Minor 'low-light, side-valve engine' of the pre-1950's to a prototype Leyland. P76-Force7 which never actually went into production in 1975. This display illustrated the affinity between ex-employees and the Car Clubs who maintain a dedicated interest in the heritage value of the cars they produced. (Attachment 'L')

## **PHOTOGRAPHIC RECORD.**

Photographs of the ceremony and supporting activities were taken. A comprehensive coverage of the day was provided by Steve Koen, Photographer, P.O.Box 373, Emu Plains, NSW, 2750. Phone (02)4735 6608.

## **PUBLICITY.**

A media announcement of the event was issued in advance. This received a limited amount of exposure in print and radio.

## **DISTRIBUTION OF CEREMONY REPORTS.**

Copies of this report will be distributed as follows:—

The Institution of Engineers' National Office Library	2
The Institution of Engineers' National Office File	1
Landcom	
(Division of Urban Affairs & Planning, Victoria Park)	1
Sydney Division Engineering Heritage Committee	1
BMC - Leyland Australia Heritage Group File/Archives	2



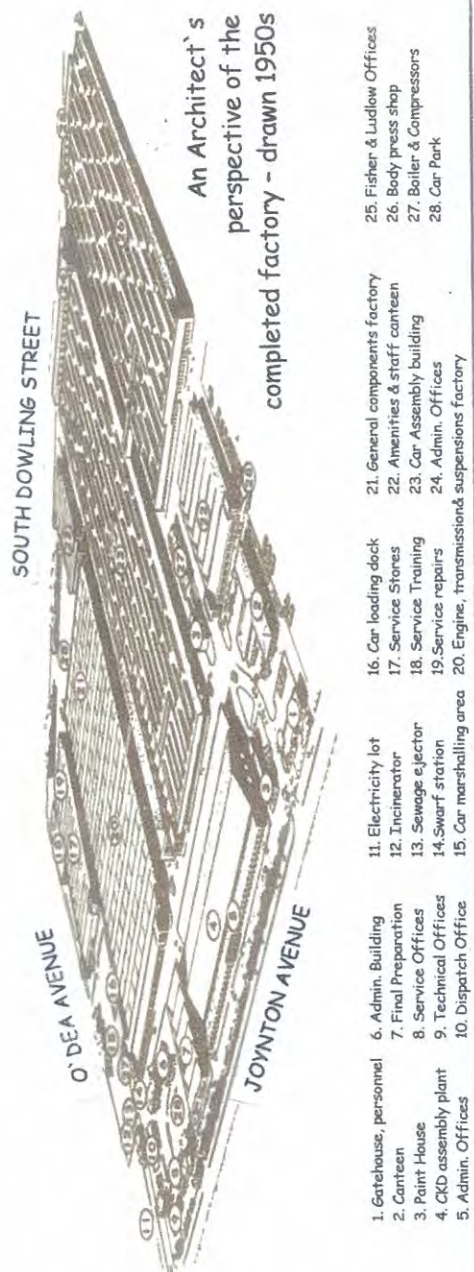


**B. M. C.  
LEYLAND AUSTRALIA  
HERITAGE GROUP Inc.**



## *Ceremony for the Commemorative Plaquing of the former Car Manufacturing Plant of British Motor Corporation / Leyland Australia with an Historic Engineering Marker*

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### *The BMC - Leyland Heritage Group has pleasure in inviting*

to join us on Sunday, June 25, 2000 at The Shannon Room at Randwick Racecourse, Sydney

Because the Plant site is now under redevelopment following the demolition of the Factory during 1999, the Plaquing Ceremony is being held in conjunction with a BMC - Leyland Australia Heritage Group Function to commemorate the 50<sup>th</sup> Anniversary of the Plant's opening and the 25<sup>th</sup> Anniversary of its closure. Details of the day's activities, parking, buffet luncheon etc. are covered in the attached announcement. *RSVP to Roy South, 44 Ruthven St., Bondi Junction, 2022 -Tel (02)9387*

*5331, Email: [rsouth@optusnet.com.au](mailto:rsouth@optusnet.com.au)*

### **PROGRAM**

**11.30am** Display of Zetland built cars and memorabilia (Refreshments available - cash bar)  
**11.45 am** Welcome - Mr John Kay, former Director of BMC-Leyland Australia  
**12.00 - 1.00pm** Buffet Luncheon - see menu on attachment.

**1.15pm** Mr. John Kay to open proceedings - brief addresses by People from the BMC Leyland era and other relevant speakers.

- The opening of the Plant in 1950 and its closure in 1975

- The Plant layout and buildings

- The Unit Plant - transfer machines etc.

- The Rotodip painting process

### **THE PLAQUING CEREMONY**

**2.30pm** Mr John Kay to introduce The Official Party of the Institution of Engineers, Australia

- The Plaquing program

- The Significance of the BMC - Leyland Plant as an historic part of Australia's Engineering and Social History - Mr Barry Anderson - M.I.E.Australia

- Unveiling of the Plaque

- Its presentation to Landcom as Owners of the Plant site

- Acceptance by Landcom

### **END OF PLAQUING CEREMONY**

1958 BMC Film "Horses to Horsepower" covering the construction and development of the Plant and its associated activities - to be shown on multiple monitors at different times

**FUNCTION CLOSES AT 4.00 pm**



## About the BMC - Leyland Heritage Group

The BMC - Leyland Heritage Group had its origins in annual reunions that followed the closure of the plant in 1975. These reunions comprised former employees determined to keep in touch and to commemorate their days at BMC - Leyland. These Reunions were held at the Racecourse Hotel at Randwick and now, at the Doncaster Hotel at Kensington. They continue to go from strength to strength.

At one of these reunions, a few of us decided to explore additional activities and a separate function was organised in October 1988 as a luncheon at a City Hotel combined with a nostalgic walk around the Victoria Park site. Although the buildings were intact, the site had long since ceased to be a bustling manufacturing plant. The buildings were demolished in 1999.

At that Reunion, strong support was expressed to pursue a supplementary agenda to build on the foundations so successfully laid by the Annual Reunion group. This gave rise to the BMC - Leyland Heritage Group. The two groups complement and support each other.

The Heritage Group is a non-profit Incorporated Association of some hundreds of former employees and interested persons whose Mission is "To preserve the Heritage of BMC - Leyland Australia and its associated Companies as a significant part of Australia's Automotive manufacturing history. We maintain a register of some 700 former employees and their associates. Our financial Membership stands at 207.

Apart from the Commemorative Plaque Ceremony, the June 26, 2000 Reunion will commemorate the 50th anniversary of the opening of a plant in 1950 and its closure in 1975. Apart from Members of the Heritage Group, there will be representatives of Car Clubs representing cars made or processed at the Victoria Park Plant. As one of our members very aptly pointed out recently, "Now that the plant has gone the only tangible evidence of our efforts during the BMC-Leyland era remains in the form of cars now so cherished by Members of relevant Car clubs".

(Roy S. South - Public Officer)

## The BMC Leyland Plant and our Application for the Plaque

The following is a précis of our submission. The document was extensive in order to do justice to and to adequately explain the significance and extent of BMC's contribution to this country's industrial heritage. Covering the complete third quarter of this century - a little over 25% of the practical history of the automobile - the BMC plant at Zetland was a major Australian automobile manufacturer and the only complete passenger vehicle manufacturer in the history of NSW.

In that time, 1950 to 1975, popular cars developed from simple to complex offerings with the introduction of features such as automatic transmissions, power steering, air conditioning and radial ply tyres. In that time, also, safety legislation resulted in safer door locks, seat belt anchorages, seat belts, head restraints, barrier crash testing, turn signals and steering column locks. Towards the end of that period, environmental requirements began to be established with the establishment of early emission controls.

At the end of WW II, Lord Nuffield, decided to develop his interests in Australia and purchased the Victoria Park site. The first factory was opened in March 1950 as a Nuffield facility

assembling Morris Minor and Oxford cars. The subsequent formation of BMC - the amalgamation of the Nuffield, Austin and Fisher and Ludlow companies - generated the funds to establish the plant which was manufacturing engines, bodies (from pressings) and complete vehicles within four years of the decision to proceed.

While there is no single feature of the 26 hectare Plant that can be said to represent a major breakthrough in automotive technology, the whole period is seen as historically significant. It was a period of significant technology transfer in which such processes as in-line transfer machines (for cylinder block and cylinder head manufacture), the Rotodip paint process (for priming complete car bodies), Just-In-Time supply principles and Flexible Manufacturing techniques were first seen in Australia.

It was a period in which advanced assembly techniques employing integrated conveyor systems, which are still applicable today, were introduced as well as the construction of the only fully integrated vehicle manufacturing facility (engines, bodies and assembly on one site) in Australia. BMC was, and still is, the only vehicle manufacturing facility where four, six and eight cylinder engines were manufactured under the one roof.

It was also a period of post war reconstruction and large scale immigration. Concurrent with the development of the plant, BMC played a major role in the assimilation of migrants who brought with them their contribution to the development of the Australian culture. There are few such facilities today.

After producing good profits in the mid 1960s when it was producing around 1000 vehicles per week the Plant subsequently faced a gradual reduction in sales success, due to influences, including a model range which was progressively less attractive than its competitors. A number of factors contributed to this, including Government tariff policy which required high volume manufacturers to maintain 95% local content while allowing a relatively large number of companies duty concessions on vehicles imported in numbers up to 7500 per annum.

The Application builds on a brief review of the history of the site since European settlement and its use as a horse racing track. It then traces the site's history including its construction, unique features and its eventual closure in 1975. The site and the engineering activities carried out are considered significant from:-

- ❖ manufacturing and automotive historical perspectives - eg the world class processes introduced into Australia and the wide range of problems that were faced and solved as well as the vehicle model range involved.
- ❖ the viewpoint of the key role BMC played in Australia's social and cultural development as this period covered post war reconstruction and large scale immigration.
- ❖ the aspect of the scale and complexity of the operation. With a workforce of typically 5,000 - peaking at 7000 - on the one site and with enlightened employment policies - needed to cope with employees from 35 nationalities - the BMC/Leyland plant was the largest private employer in the Sydney region.

(Barry Anderson, Roger Foy, Norm Prescott, Roy South - September 1999)



**ATTENDANCE LIST - ROYAL RANDWICK RACECOURSE - JUNE 25, 2000**

**THE INSTITUTION OF ENGINEERS, AUSTRALIA**

Andrew Leventhal & Mrs Leventhal, President, Sydney Division  
Don Cottey, Engineering Heritage Committee, Chairman  
Don Fraser & Mrs Faith Fraser, Engineering Heritage Committee, Secretary  
Ian Arthur, Engineering Heritage Committee, Member  
Ian Bowie, Engineering Heritage Committee, Member  
John Rankine, Fellow, Consulting Engineer

**ROYAL AUSTRALIAN HISTORICAL SOCIETY**

Dr. Ruth Frappell & Dr. Leighton Frappell, President

**NSW STATE HERITAGE OFFICE**

Tony Prescott, Historian

**LANDCOM (Division of the Department of Urban Affairs & Planning)**

Mark Seymour

**COUNCIL OF VINTAGE, VETERAN & THOROUGHBRED MOTOR CAR CLUBS**

Terry Thompson, President  
David Marshall-Martin, Vice President

**ALL BRITISH DAY COMMITTEE**

Brian Jubb, Chairman  
Col. Smith, Vice Chairman

**BMC - LEYLAND HERITAGE GROUP**

Norman Prescott, President  
Bruce Elson, Vice-President and Secretary  
Roy South, Treasurer and Public Officer  
Roger Foy, Publicity and Car Club Liaison  
Barry Anderson, Committee Member  
Tony De Luca, Committee Member  
Jim Hines, Committee Member  
John Lindsay, Committee Member  
Bill Shipway, Committee Member  
John Kay, Master of Ceremonies  
Rod Downs, Speaker  
Owen McDonald, Speaker



## INTRODUCTION AND WELCOME

### - JOHN KAY former Director of Leyland Australia

Distinguished guests, Members of the Institution of Engineers, Australia, Members of Car Clubs, fellow ex-employees of BMC and Leyland Australia, ladies and gentlemen.

I am honored to have been invited by the President and the Committee of the BMC - Leyland Heritage Group to welcome you here today, and to act as Master of Ceremonies for the events that will take place at this site in commemoration of another site, not that far from here, that has played such an important part in the lives of most of us, and indeed, in the life of this City and this Nation.

Today, we join together to celebrate a building block in Australian industrial history. While we remember a great industrial enterprise and its factory, this is also a celebration of the involvement of many of the people here with Sydney's only complete automobile factory which, for a time, was the most important employer of labor in this great City.

It was a plant that welcomed people from all over the world as Australia absorbed migrant labor following the Second World War. The Nuffield factory, which became BMC, which became Leyland gladly welcomed these migrants, giving them their first jobs, shoulder to shoulder with Australian-born workers and teaching Australian industry much about absorbing a migrant labor force, caring for its well-being, teaching it the language of the land and often caring for the health of the workers' families.

We are proud of what our company did for these people, for our Australian born workers, for the City and for the Nation and we remember its passing with a great deal of sadness mixed with pride. You will hear a lot about Zetland, its stories and traditions from today's speakers who are much better qualified to speak on these matters than I am.

But moving right along, the first thing you would want me to do is to say thanks, on your behalf, to the people who have worked so hard to organize this function. More than 300 people have accepted invitations to be here today and you can imagine the voluntary work that has gone into promoting the event and organizing the program and the displays.

This main load has fallen on the committee of the BMC-Leyland Heritage Group Inc. under indomitable president Norman Prescott, who I am proud to say was General Manager of Service long before and long after he was one of the key executives in the Sales Division when I had the privilege of being its Director. He has been ably assisted by Vice President and Secretary, Bruce Elson, tireless Treasurer and Public Officer, Roy South and committee members Barry Anderson and Roger Foy. Would you please join me in expressing our appreciation for a job very well done.

Today's audience is a very diverse group, mostly from the BMC-Leyland Heritage Group, but approximately one third represent car clubs associated with BMC-Leyland products of the Zetland era. I would also like to make special mention of Dr Ruth Frappell, Councillor of the Royal Australian Historical Society, Mr Andrew Leventhal President of the Sydney Division of the Institution of Engineers, Australia, Mr Tony Prescott representing Rosalind Strong, the Director of the Heritage Office of NSW (Tony, of course, is Norm Prescott's son), Mr Mark Seymour from Landcom, and Mr. Colin Smith of the All British Day Committee and last, but not least, Mr Terry Thompson of the CVVTMCC which is the umbrella organization of vintage and veteran car clubs. We welcome you all most warmly.

For those who may not know, the BMC-Leyland Heritage Group is not a car club. It is an incorporated Association whose mission is "To preserve the Heritage of BMC-Leyland Australia and its associated Companies as a significant part of Australia's Automotive History". For those who would like more details, the Group has produced a handout which is available from any of the committee members.





Finally, I would like to give a warm welcome to overseas and interstate visitors and I might mention that while welcoming all the members of the press, I believe we need to single out Gavin Farmer, who has done so much to chronicle the history of the P76 in particular. His outstanding article on the history of the P76 in the prestigious Automotive Quarterly does the Company and its people proud. Gavin has travelled from Adelaide at his own expense to be at this celebration. I would also like to mention that ladies make up approximately 38% of our attendees today. We thank them for their wonderful support and hope that this percentage can edge up to 50 when next the Group has a celebration.

It now gives me very great pleasure to call on Mr Roger Foy to make a special welcome to officials and members of the Car Clubs.

Ladies and gentlemen. I give you Roger Foy!

Roger Foy introduced and welcomed the Car Clubs listed in Attachment D. He then called on Col. Smith to say a few words.





**CAR CLUBS PRESENT**

A.C.T. Mini Club.

Austin A40 Club of NSW.

Mini Car Club of NSW.

Morris Minor Car Club.

Leyland P76 Classic Car Club.

Nepean District Morris Minor Car Club.

Austin Motor Vehicle Club.

Leyland P76 Owners' Club.

M.G. Car Club.

Wolseley Car Club.

Land Crab Club of Australasia.

Sprite Car Club of Australia.



**REPORT OF SPEECH BY JOHN RANKINE of RANKINE & HILL, CONSULTING ENGINEERS.**

Mr. Rankine firstly expressed his thanks for the invitation to partake in this occasion in which he added a special thanks to Nuffield and BMC as they were one of his first customers on forming the partnership of Rankine & Hill.

In the first week of October 1955, he received a phone call from the office of Architect, Frank Feledy. An extract from John Rankine's Autobiography "The World is your Client", outlines the result of this conversation.

"At Frank Feledy's office on the Friday, he read from a memo from BMC stating they wanted a building some 750 feet long in three bays of 60 feet each, making it 180 feet wide with cranes in each bay, two 25 ton cranes in the first bay, and one 20 ton crane in the second bay, and one 15 ton crane in the third bay. Height-to-crane hooks were all defined and the light factor from the roof had to be similar to that used by an architect in England as set out in a paper he gave me, such that by using this design the shape of the roof and glass would give regular light intensity over the whole floor.

With Feledy, we sketched up and discussed different wall sections, side and end window suggestions, possible gutter details and so on. Then he dropped the bombshell. "Lord. Nuffield is arriving in Sydney from New Zealand on Tuesday morning and he wants to sign the steel supply contract on Tuesday night". Four days time. and no architectural drawings.

I went back to the office and arranged for all draftsmen to come in at six o'clock on the following Monday morning. I went to a chemist and bought some Benzedrine tablets and went home where I had a drafting table set up. I worked all Friday night, all Saturday, all Saturday night, all Sunday, and by six-thirty on Sunday evening I had the design and layout finished. I set the alarm for five-thirty Monday morning. I went into the office and got the draftsmen started at six-o'clock. I then arranged for Sydney Steel, structural steel supplier, to have two people in our office the following morning and they were to "take off" or measure all the steel quantities. By two o'clock Tuesday afternoon we had all the drawings finished and a firm contract drafted for the supply of structural steel from Sydney Steel. It was signed that night by Lord Nuffield. The only extra steel required was a channel section, added by the Architect for architectural appearance around all skylights".



Rankine & Hill, Consulting Engineers.



**REPORT OF SPEECH BY ROD DOWNS, SUPERINTENDENT, MACHINE PLANT ASSEMBLY,  
BMC - LEYLAND AUSTRALIA.**

Mr. Downs referred to the pride and excitement he first experienced on joining BMC in June 1963. He was quickly impressed by the range of knowledge and technology throughout the plant and how this was reflected in the Systems, Procedures and Documentation that applied. He colorfully summed up his memory of the three main areas. The Press Shop - impressive and aggressive; CAB 1 a magnificent mix of Co-ordination, Color, and Movement; and the Unit Plant, where he worked, the Heart of the complex.



The Unit Plant comprised two areas - the Machine Shop and the Assembly Lines/Hot-Run. The Machine Shop produced some 84 different power-unit and suspension components. Major items of equipment were three Transfer Lines - cylinder block, cylinder head, and gearbox. These were world-class technology and the first of its type in Australia. An example was the cylinder block transfer line with 50 workstations automatically sequenced for milling, drilling and boring, all to very close tolerances. This was all controlled by just two human operators to load and unload.

The Machine Shop output was conveyerised into a maze of roller-tracks and marshalling points after hot-washing. The hot-wash had two purposes, one of which was the heating of a variety of lunches for the many nationalities of workers. The aroma mix of cutting fluids and world-wide cuisine was something to be remembered.

The Hot-Run was a vital and highly innovative part of the operations. Fully automated delivery of power units to 20 Test-stations, each equipped with oscilloscopes, meters, gauges and electronic timing lights. Each power unit was run under its own power at full operating temperature for 20 minutes. Finally, there was a Blue Light Area where ultra-violet light testing ensured an oil-tight assembly. An additional item in the test area was a final engine balancing machine introduced for the P76 Y8 engine.

"Working in this technology was an inspiring experience for me. To some a job is a means to an end - a lucky few of us experience something truly special. On that last day in 1974 the dream was over".



## THE CAR ASSEMBLY BUILDING 1958-1971 - A TALK BY OWEN McDONALD, former VEHICLE PLANNING ENGINEER, CAR ASSEMBLY

The Car Assembly Building was responsible for Paint, Trim and Final Assembly. Paint, I will come back to.

The Trim operation was the glazing and trimming of the vehicle which was carried out on the "Trim Tracks" A and B. The "Tracks" were slat type floor conveyors with an elevated section that allowed underbody access. The operators could stand on the conveyor or ride in the body.

Final Assembly was where the car body met the mechanicals - where the body dropped from the overhead conveyor and was lowered quite briskly onto the D Track fixtures where the engine was located. This could be tricky especially with a crowded front wheel drive engine compartment but I don't recall any collisions during the drop.

After D, the body (it was almost a car by this) was transferred to C Track. On C Track the car sat on its own wheels for the first time.

Also in the CAB were some large sub assembly operations - A Trim Shop where the equivalent of two hundred lounge suites a day were manufactured plus all the door linings and headlinings and felt for under carpet and the PVC bits that were pasted into various locations.

There were 70 large industrial sewing machines — these machines could literally sew PVC to three ply and produce a satisfactory seam - you could imagine what they could do to a finger. I have a recollection that at maximum speed and maximum pitch, the sewing speed was about 100 feet per minute.

Trim was cut and sewn and stapled and tacked and hog ringed and pasted and pulled onto steel frames and, in the right order, by color and by model, and at the right time, trim was delivered to the assembly line.

1000 wheels a day were painted and fitted with tyres - all sizes of wheels and all types of tyres.

There was a large small parts paint operation which dip primed everything and a color booth for the small parts that had to be finish enamelled. Anything that was not a car body was a small part.

At this point I should mention that there were two CAB buildings. The CAB 2 was the old CKD building where Mini Minors were assembled in one half and trucks were assembled in the other. At one time, Mini Minors were Rotodipped and transferred to the old CKD Paint Shop to be painted. The history of the CKD building is too complicated for to-day.

The CAB 1 building supplied sub assemblies and paint items to CAB2 - these were delivered by a road train. There was a small army of material handlers and fork trucks all managed and sequenced and no-one noticed them.

There was also a huge store system that received and passed on the mountain of components needed every day.

The start of the CAB was the Rotadip — a large spit was passed through the body and the spit carried the body sideways through six pretreatment stages and through the paint dip and while being moved it was rotated in the stages where it was necessary. As the body rotated all of the body was immersed — progressively but never all at once.

**The Rotodip Process** was - Degrease - Zinc Phosphate - Dip Paint with stoved primer. It gave the customer a car with very durable protection against corrosion.

The dip paint itself had a number of necessary properties - good adhesion and flexibility, good stone chip performance etc. and the dip process successfully applied enough thickness of paint. This baked primer could be





rubbed easily without clogging sanding paper and dip paint also provided a good adhesive base for other coats. As a dip coat it looked very good but as soon as the gloss enamel coat was applied a myriad of tiny runs showed through. The result was that all external surfaces that required "showroom finish" had the primer coat almost totally and very expensively rubbed off. The paint removal had no effect on corrosion performance as long as the rubbing did not continue below the last of the primer - even then, corrosion didn't start in the middle of outside panels — it started in seams and joints where the primer coat was intact.

The rest of the paint shop worked very well - good spray booths, good ovens, all paint reticulated to spray booths etc. After I left BMC, I found out what it was like to have poor spray booths and ovens.

We started at twenty bodies per hour (a 3 minute cycle) and stretched capacity to about 25 per hour. The spray booths were not long enough to go any faster.

We sprayed HOT primer surfacer - (Red Oxide). It was hot so that the solvent content could be lower and a heavier single coat could be applied. This was wet rubbed.

We applied a gray SEALER coat which was sprayed Wet on Wet- a full coat of paint - a minute or so to allow the solvent to evaporate and a second full coat. It was given a light dry scuff.

The color coat was also sprayed Wet on Wet. After stoving the paint finish was glossy and did not need polishing - not like lacquer finishes that had to be buffed.

Two tone cars were popular and a second Duo-tone booth allowed cars to get their second color. In a mind boggling exercise involving both conveyors and scheduling it was possible to respray any car, Monotone or Duotone and have that car catch up its position on the schedule.

Spray Painting stoving enamel was an art - the painter had to put on as much as he dared until the coat was uniform and shiny wet. If part was wet and part was dry the overspray settled on the dry parts and showed up later as grainy "Dry Spray". If he put too much on it still looked good but when it reached the oven the paint sagged into "curtain runs" and it was an expensive respray. Dark colors always looked "Wetter" and if you measured the thickness the dark coats were thinner than light colors. It was a very subjective process and not every one could do it.

Spray painters started in the primer surfacer booth and were promoted until they reached the color booth where they were finally allowed to spray under bonnets and wheel arches and inside the boot. When and if they reached the hallowed ranks they were allowed to spray the second coat of finish enamel and then they could adopt all the Prima Donna antics of operators who knew they were valuable and knew how far they could push it even with the redoubtable Barry Duncan who was the long term paint shop supervisor.

The other artists in the shop were the sewing machine operators on seat cushions and squabs. A set of sewn trim had a lot of cost invested in it at the point when one seam could spoil it. Only some machinists had the nerve to sew quickly without rejects — they were every bit as skilled as the spray painter but we never had the antics.

There were no other skills of this type in the CAB that I can recall.

The whole business of Car Assembly had been deliberately deskilled - The capital investment in the CAB was just to achieve this result. Starting at the design stage where components could not be wrongly assembled - screw drivers and nut runners with torque control so that the operator could not over-tighten. Hoists and aids to ensure no compensation accidents. The CAB only did what many seventeen year olds did in their fathers garage - put a car together with a set of hand tools.

It was so easy that Roger Foy and his mates in experimental could do it regularly, but neither they nor the seventeen year old could assemble one every four and a bit minutes, and the CAB did that with Quality Control getting in the way.

At the same time there were some other essential skills in the CAB.

Each time an operator reached out, the correct component was there. Someone had loaded the component onto a



conveyor that was beside his working station, a storeman had filled a storage rack. The right color, the right quantity, the right quality on time every time. A superb and sophisticated organization was run by the Supply Department to make this happen.

The planners nominated the location and the stores made delivery.

As if this weren't hard enough there was continual change. The change of one part for another was easy if nothing else changed. If other changes had to be coordinated, the complexity increased. If the change affected imported, local buy and local make items at the same time the apparently simple change had the capacity to stop the shop - and it never did.

The changes occurred so smoothly that some may have thought it was easy. It was not.

A system of communication from England, to Product Design, to Planning, to Supply, to Quality Control, to Production, to Service, to Parts and Accessories, to Accounts and even Sales - all were aware of every change no matter how simple - and it was routine work, it didn't require brain surgeons but every person in the chain was imbued in the culture of on time performance and I don't recall a fiasco in this chain - some close runs particularly with the assembly of trucks but never a stoppage.

This supply procedure over a whole range of models - the Mini Minor family, the Saloon, the Van, and the Cooper S and the Moke. Even if the change were supposed to be initiated at the same point, schedule changes between initiation and final could move the change points months apart. Four Door and five Door, large engines and small, standard specials like police Cooper S, Deluxe and standard models, all at once and changing all the time.

I never understood the system but I kept it a secret until today.

The people who made this happen are a long list - Peter Davis and Rex Scanlon who died in a car accident in a company car - Ray Ephraim from Planning and Boyd Cudden from Supply and his under recognized staff -there were others, but these are the ones I recall as achievers.

This organization structure and the culture of on time, achievement is the REAL CAB story - it could be the story of all BMC but the CAB and, to a lesser extent, the Body Shop bore the load of this perpetual fluidity.



## OVERVIEW OF BMC - LEYLAND SITE AND PLANT HISTORY - BARRY ANDERSON, former DEPUTY CHIEF PRODUCT ENGINEER

Thank you John

Distinguished Guests, Ladies and Gentlemen:

Today we recognise the efforts of about 50,000 people who, from 1950 to 1975, collectively spent 130,000 years building motor vehicles at Victoria Park.

- Victoria Park was a melting pot during this time, Most of the employees -typically 5000 at any time, were migrants. Most of those could not speak English. Early instructions were often by sign language.
- 35 languages were spoken in the plant. Multi-lingual leading hands were used and employees were grouped to aid communication. Company run English language classes helped migrants gain English speaking skills quickly.
- Migrants were immediately more adventurous with food. Locals were introduced to exotic smells as imaginative ways were found to heat lunches -there being heat sources in abundance for those with initiative.
- It was a happy place to work. There were few incidents over the years and, to my knowledge, no sabotage. Naturally many of the migrants stayed only a few years but this was accepted as they had made a contribution to the Company and the Company had helped them start in their new country.



It is interesting to compare the years at Victoria Park with the Snowy Mountains Scheme:

- They started at about the same time;
- Both were very significant employers of migrants;
- Both played significant parts in the post war reconstruction phase in NSW history;
- Including the numerous suppliers, both provided employment to about the same number of people perhaps 100,000 each.

This very significant contribution to the social development of NSW was made possible by the wide range of engineering expertise and effort that was required for the original construction and subsequent operation of this 26 hectare factory.

But let us look at some of the early history of the site.

- The site was part of the Waterloo Swamp - this being connected to the Lachlan Swamp in Centennial Park and to the Botany Swamp.
- These swamps provided water for Sydney's second and third water supply systems, the first links with Australia's engineering heritage.
- Later they provided water for the Sydney Hydraulic Company which pumped water to the Pump House (now a Tavern) in Darling Harbour.
- A wall to dam the Waterloo swamp ran through the intersection of Joynton Avenue and Epsom Road. A pumping station was located close by.
- In 1907 Sir James Joynton Smith purchased the site for a racecourse. Racing operations commenced in 1908.
- Building the racecourse involved draining the swamp which revealed a vast supply of peat - perfect for growing turf for the track.



- As an aside, the swamp provided many challenges during the racecourse construction. It certainly did so during the construction phase of the car factory. I understand it is providing the current owners a few challenges even today.
- In 1909, one of the earliest aeroplane flights in Australia was made there by Colin Defries - a hop of 115 yards in 5.5 seconds. One Maurice Guillaux also gave aerobatic displays in 1914.
- The Tote building was erected in 1917 providing another link with Australia's engineering heritage, housing an early George Julius totalisator machine. The Julius' machines were used throughout the world, the last of these continuing in service (at Harringay Stadium, North London) until 1987.
- George Julius became President of the IEAust in 1925.
- The racecourse flourished during the 1920s and encompassed the Kensington golf links in the 1930s.
- Resumed in 1942 for Army purposes, the racecourse reopened in 1945 under the control of the Australian Jockey Club. Racing operations finally ceased on the site in 1952 after an association of 45 years.
- The transition from horses to horsepower is depicted in the film we have been showing today. From 1950 to 1975, it housed the factories for Morris, Austin, Wolseley and Leyland vehicles.
- Since the automotive plant's closure, the site has played the more passive role of Navy storage depot.
- It is about to enter a new phase as depicted on the diagrams on the walls.
- Through this time - almost the whole life of the practical motor car - the Tote Building has survived - a continuing link to the site's history. The plaque to be unveiled shortly will be mounted adjacent to it.

Returning to the BMC-Leyland phase.

- Owen and Rod have spoken about features of the Unit Plant and Car Assembly Building. I will emphasise only a few of these features:
- Automotive manufacture involves the smooth flow of large quantities of material from suppliers both internal and external to the assembly line so that 6000 parts can come together to form each finished product.
- The BMC-Leyland operation with its system of interconnected conveyors was a text book example of this.
- Just-In-Time manufacture is a buzz word today but the Victoria Park factory built in the 1950s was designed around the concept
- The plant was not purpose built for one model but was capable of producing a range of models and variants in any sequence. In an era of mass production, the concept of flexible manufacture existed long before the term was coined.
- The plant was unique in Australia:
  - It was only factory where engine, body and final assembly manufacture was done on the one site;
  - It was the only plant where 4, 6 and 8 cylinder engines were made under the one roof
- As long ago as 1958, the cars coming from Victoria Park were of 96% local content - meaning that virtually every part was made in Australia.
- There is one other connection with our engineering heritage. Sir William Morris - Lord Nuffield, through the Nuffield Foundation, established, in 1950, the Nuffield Chair of Mechanical Engineering at the University of NSW, covering full funding for 15 years and part funding until December 1998. The Nuffield Professors were:

Prof.. A.H. Willis: 1952 to 1954,  
Prof R.A.A. Bryant: 1961 to 1989,

Prof. L.C. Woods: 1954 to 1960,  
Prof B.E. Milton: 1989 to 1995

We should remember the models that we built. To mention but three:

- The Morris Minor, made at the plant from 1950. was a very significant design. It introduced standards of steering response and handling to cars that were not achieved by any but the most expensive cars of the day.



- The Mini Minor, made at the plant from 1961 was a revolution and set the standard for small car design. There is not one small car made to-day that does not owe its architecture to the east west engine concept of the Mini.
- And, of course, the P76. The P76 seems to have become part of Australian folk lore. Of all the cars that have been built in Australia, it is the one that is constantly being referred to even today. Why a few weeks ago it was front page news in a motoring section. Only 10 days ago a prominent Federal politician was invoking its name and only last week a journalist at a Toyota launch made reference to it.
- It was an all Australian effort:
  - it involved 400 man years of product design time alone;
  - it met all the design weight, performance and cost targets and the whole 4 year pre production program was never more than 6 weeks late;
  - it was the company's first large car; and
  - it was launched in the middle of the oil crisis of 1973 and was blamed for the company's demise. Like so many things in life, it was more complicated than that.
- Still, 25 years later people remember it - and many with affection - as the owners here will, I'm sure, agree.

None of this would have happened without the people. I was privileged to work with many very skilled and dedicated people at Victoria Park during 19 of the 25 years.

The organization had such depth of talent that, no matter what the topic, there was always someone who knew about it and whose job it was to know about it. As it is impossible to mention them all by name, I have refrained from naming any. But today we salute them all.

And so on behalf of the BMC-Leyland Heritage Group, I thank the Institution of Engineers Australia for endorsing our submission under the Historic Engineering Marker Program and for providing the plaque that is waiting to be unveiled.



**ADDRESS BY ANDREW LEVENTHAL, PRESIDENT, SYDNEY DIVISION, INSTITUTION OF ENGINEERS, AUSTRALIA**

Distinguished guests

Dr Ruth Frappell, President of the Royal Australian Historical Society  
Anne Warr, Sydney City Council, Area Manager for Heritage  
Mark Seymour, of Landcom  
Members of the BMC-Leyland Heritage Group  
Those of you present who worked at the BMC-Leyland plant  
Messrs John Kay, Rod Downs, Owen McDonald and Barry Anderson who worked at the plant.  
John Rankine, eminent Consulting Structural Engineer  
Members of the Heritage Committee of the Institution of Engineers, Australia, and particularly Don Cottee (Chair of the Sydney Group) and Don Fraser Secretary of that same group)



Ladies and Gentlemen,

Thank you for the opportunity to contribute to today's proceedings.

You've heard details of the history of the site and the contribution of the BMC-Leyland plant to the social and economic life of the Zetland area - no, more correctly, to the Sydney region. I found it fascinating to hear from Barry Anderson about the history of the site before it was occupied by British Leyland, and - though we're not on the site today - that a connection remains through the totalisator building on the site and this horse racing venue today. The British Leyland site was certainly one that was well recognized by most of the populace of Sydney, even after its closure 25 years ago. I can certainly recall passing the site and seeing the newly built cars "grazing" around the plant.

I represent the Institution of Engineers, Australia at this ceremony, in my capacity as President of Sydney Division. I do this with pride, as the Australian Historic Engineering Plaquing Program provides a means of recognition of the contribution of the Engineering Profession to the well-being of the community.

I have been asked to explain to you some of the background to the Australian Engineering Heritage Plaquing Program. Please bear with me for a few minutes before the plaque is unveiled.

The Institution of Engineers Australia (IEAust) is the peak body representing the professional engineering team. IEAust has over 60,000 members Australia-wide. Of these, some 16,500 are affiliated with Sydney Division. "Sydney" is a bit of a misnomer, since the coverage of Sydney Division is all of NSW with the exception of the NE (which is covered by the Newcastle Division) and the area local to Canberra.

IEAust has a broad spread of interests:

- It promotes and advances the science and practice of engineering in all its forms.
- It encourages the development of Australia's technological capacity and its contribution to our economic growth.
- It provides advice on policy input on engineering and technology to Government.
- IEAust provides services to our members - through membership standing, continued professional development and graduate development programs.

One of the important parts of the public face of IEAust is the activities of our Engineering Heritage Committees. Your presence here today is evidence of that value.

So, what is heritage?? Heritage is the evidence of our past that we leave to future generations.

- It doesn't have to have high monetary value, and it doesn't have to be beautiful — though that helps!!!
- Most people think of heritage as being buildings, but it can be a lot more.
- Heritage does visually and tangibly tell the story, in that "we stand on the shoulders" of our forebears.
- In that way, it tells where we came from, and why our infrastructure is the way it is.
- And without it, I suggest, our society would be spiritually poorer.



More than other professionals, it is the engineer who has provided our national infrastructure. For example, I suggest to you that:

- there would be no Sydney Opera House without the structural engineers,
- there would be no computers without electronics engineers,
- and particularly, there would be no cars without mechanical engineers.

The work of the IEAust Heritage Committee therefore is about:

- making people aware of our rich engineering heritage
- making them aware of the contribution of engineers, and
- encouraging the conservation of important engineering works.

Examples of this include:

- The **Oral History** programs, which record the experiences of eminent engineers.
- The **Walking Guide** to the engineering heritage of Sydney.

and.....

This brings me to the Historic Engineering Plaquing Program. This program is one of the important public awareness campaigns of the Heritage Committee:

- Its purpose is to bring public recognition to significant engineering works, and the engineers who create them.
- For works of outstanding national importance, there is the National Engineering Landmark award, of which 16 so far have been awarded throughout Australia.
- Among these include: the Sydney Harbor Bridge, the Parkes Radio Telescope and the Snowy Mountains Scheme.
- For works of regional significance, there is the **Historic Engineering Marker**.
- So far, 47 of these have been awarded nation-wide.... the works and engineers we honor today make that 48.
- The BMC-Leyland Motor Vehicle Plant joins such diverse works as: Parramatta Dam, Locomotive 3801, Bendigo Gas Works, the Furphy Water Cart, Smith's Stump Jump Plough, and the Railway Bridges near Wagga..... good company indeed.

I trust this provides some background to today's ceremony.

The details of the BMC-Leyland Motor Vehicle Plant have been ably detailed by earlier speakers. I would, however, like to read to you the text of the plaque of this Historic Engineering Marker. **(Attachment J)**

Of course, it is obvious to you all that this is not the site of the BMC Leyland plant. With the agreement of Landcom, since the site of the plant is a construction site at present, this plaque - after its unveiling will be held by the Heritage Group as custodians until completion of the construction works. Then, the plaque will be permanently installed at the site by Landcom.

It is now my pleasant task to unveil the Australian Historic Engineering Plaque. The President of the Royal Australian Historical Society, Dr Ruth Frappell, will assist me in this task. Additionally, I would ask Mark Seymour from Landcom to come forward to accept the Plaque formally.





# HISTORIC ENGINEERING MARKER

## BMC - LEYLAND MOTOR VEHICLE PLANT

THE BRITISH MOTOR CORPORATION - LEYLAND AUSTRALIA MANUFACTURED MOTOR CARS ON THIS 26 HECTARE SITE BETWEEN 1950 AND 1975. DURING A PERIOD OF SIGNIFICANT POSTWAR RECONSTRUCTION, MIGRANT ASSIMILATION AND TECHNICAL INNOVATION, IT EMPLOYED A PEAK OF 7000 PEOPLE FROM 35 NATIONS.

THE ONLY PLANT IN NSW TO MANUFACTURE THE COMPLETE VEHICLE, IT INTRODUCED TO AUSTRALIA THE IN-LINE TRANSFER MACHINING OF ENGINE BLOCKS, THE "ROTODIP" PAINT PROCESS, AUTOMATIC CONVEYOR ASSEMBLY PROCESSES AND MAJOR ADVANCES IN JUST-IN-TIME AND FLEXIBLE MANUFACTURING CONCEPTS.

DEDICATED BY

THE INSTITUTION OF ENGINEERS, AUSTRALIA 2000







PRESENTATION OF THE PLAQUE

L to R ANDREW LEVENTHAL DR. RUTH FRAPPELL MARK SEYMOUR



UNVEILING THE PLAQUE

ANDREW LEVENTHAL AND DR. RUTH FRAPPELL



THE CAR SHOW



THE BMC - LEYLAND AUSTRALIA HERITAGE GROUP COMMITTEE

L to R TONY DE LUCA, BRUCE ELSON, BARRY ANDERSON, ROGER FOY, ROY SOUTH, BILL SHIPWAY, NORMAN PRESCOTT



11<sup>th</sup> February, 2000

**The Institution of Engineers Australia,**

We are delighted to know that the Institution has approved the awarding of an Historic Engineering Marker to Victoria Park in recognition of its years as the BMC – Leyland car manufacturing plant.

I understand that the Institution required a letter from us, as Owners of the site, to formally give our approval to the affixing of the Bronze Plaque in an appropriate location on the Property.

This letter formally confirms this approval.

I understand the BMC – Leyland Australia Heritage Group will make all the arrangements for the unveiling ceremony to be attended on site by about 20 people representing the Institution, Landcom, the Heritage Group and other interested parties. (The plaque will be unveiled from an easel initially).

At the request of the Heritage Group, I have passed this letter on to them so they can attach other details before forwarding it to you.

I look forward to the occasion.

Mark Attiwill



**Development Director**



**LANDCOM**  
(A Division of the Department of Urban Affairs and Planning)  
Victoria Park Project Office  
52-112 Joynton Avenue, Zetland NSW 2017





## CARS ON DISPLAY

Morris Minor	MM Tourer
	Series II Tourer
	1000 2 Door
	1000 4 Door
	1000 Utility
	1000 Traveller
	1000 Van (NRMA)
Morris J Van	(NRMA)
Austin A55	Saloon
	Utility
A95	Westminster
Wolseley	6/90
	1500
Austin	Princess 3 Litre
	Princess Limousine
A40	Farina
A99	Westminster
Princess R	4 Litre
Austin	Lancer Series II
Morris	Major Elite
Austin Freeway	Prototype
Wolseley	24/80 Mark I
	24/80 Mark II
Morris	850
	Mini Cooper
	Mini Deluxe

Morris	Cooper 'S'
Leyland Mini 'S'	
	Clubman GT
	Mini Clubman Van
Morris	Mini High top Van
Leyland Moke Californian	
Morris	1100
	Nomad
Austin	1800 Mark II
	1800 Utility
	Tasman
	Kimberley
Morris	Marina 1.8
Leyland Marina 262	
M.G. "B" Mark II	
M.G.	Midget
Austin Healey Sprite	
	Sprite Mark IIA
	Sprite Mark IIIA
Morris Cooper 'S' Monte Carlo	
	Works Racing
Leyland P76	Super
	Executive
	Targa Florio
	Force 7
	Force 7